



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/532,096	04/21/2005	Peter Babler	271119US0PCT	6475
22850	7590	09/05/2007		
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER GALLIS, DAVID E	
			ART UNIT 1625	PAPER NUMBER
			NOTIFICATION DATE 09/05/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com  
oblonpat@oblon.com  
jgardner@oblon.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/532,096	<b>Applicant(s)</b> BABLER ET AL.	
	<b>Examiner</b> David E. Gallis	<b>Art Unit</b> 1625	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 21 April 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>5/10/05</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

1. Claims 1 through 7 are pending. Applicant's claim to the October 23, 2002 date based on priority of PCT/EP03/11736 is acknowledged.

#### ***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1 through 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Forlin et al. (WO 02/14298 A1, Published February 2, 2002) as applied to the claims above, and further in view of Greco (US 3,000,188, September 19, 1961).

Claim 1 is drawn to a continuous process of recirculating an olefin which has not been reacted in the epoxidation of olefins by hydroperoxide to yield oxiranes and is present in the reaction offgas stream. The process is characterized as compressing and cooling the offgas stream, separating the olefin from the compressed and cooled offgas stream by distillation, and epoxidizing the separated olefin by means of hydroperoxide. Claim 2 recites a further limitation of claim 1 that the offgas stream be compressed to a pressure of 2 to 30 bar and cooled to a temperature of 0 to 70°C. Claim 3 recites a further limitation of either claim 1 or claim 2 that the compression occurs in at least two stages.

Forlin et al. discloses a process comprising feeding a vent product from a reactor into a further distillation to obtain a product of unreacted olefin which is recycled into a

Art Unit: 1625

reactor for further reaction. The overall reaction comprises the production of an olefinic oxide by direct oxidation of an olefin with hydrogen peroxide (a hydroperoxide).

However, Forlin et al. does not teach compressing and cooling the offgas stream (reactor vent) prior to distillation (see page 4, item (g), lines 3 through 8; page 3, items (a) and (b), lines 6 through 16).

Greco discloses a process for the separation of ethane and ethane (C2 splitting) or propane and propylene (C3 splitting) (see column 2, lines 26 through 28) that comprises distillation at 93 to 98 p.s.i.g. (6.4 to 6.8 bar) and -77 to -40°F (in the case of ethane/ethane)(column 3, lines 69 through 72, and FIGURE 1). The distillate is then further compressed to 270 p.s.i.g. (18.6 bar) at 49°F (9°C) and subsequently reduced to 10°F (-12°C) by indirect heat exchange (see column 4, lines 32 through 43).

Clearly, Forlin et al. combined with Greco teach all the functional elements of the instant claims 1 through 3. The two stage compression and cooling process taught by Greco would be easily be inserted into the epoxidation process of Forlin et al. by one skilled in the art. While the exact temperatures and pressures cited by Greco reflect the separation of ethane and ethane, Greco clearly and repeatedly states the invention's utility for the separation of propane and propylene as well (see column 1, lines 14 and 15, and lines 28 and 29; column 6, lines 40 through 43). The pressure and temperature ranges recited in instant claim 2 are physically interdependent and are obvious process optimizations for propane and propylene separation routinely practiced by one of ordinary skill in the art.

***Claim Objections***

4. Claims 4 through 7 objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim can not depend from another multiple dependent claim. See MPEP § 608.01(n). Claim 4, and claims 5 through 7 serially, depend from any of claims 1 to 3. Claim 3 of which has a multiple dependency on claims 1 and 2. Accordingly, the claims have not been further treated on the merits.

1. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Gallis whose telephone number is 571-272-9068. The examiner can normally be reached on Mon-Fri 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Janet Andres can be reached on 571-272-1600. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Application/Control Number: 10/532,096

Page 5

Art Unit: 1625

David E. Gallis  
Patent Examiner

A handwritten signature in black ink, appearing to read "B. Dentz", with a stylized, cursive script.

BERNARD DENTZ  
PRIMARY EXAMINER